may be noted that the lizard is one of the forms of the sex-totem in South Australia. In connection with children, it is interesting to note that we have in the Euahlayi a variant of the Arunta belief recorded by Strehlow, which has also a close connection with the belief of the northern Arunta visited by Spencer and Gillen.

An important subject, on which little information was previously available, is that of the *yunbeai* or individual totem, which is usually confined to medicine men, but among the Euahlayi is held to be granted to their special favourites. More important still is the information about Byamee. Unless Mrs. Parker's evidence can be impeached on the ground of European influence, it will henceforth be impossible to deny that the Australians have gods and a religion. We learn from this work that prayers are offered to Byamee both at the Bora and at the funerals of men.

Mrs. Parker alludes to the boomerang, and provides mathematicians with another problem in the shape of the performances of the *boodthul,* a miniature club which travels further if it is thrown through the top of a bush than if it has an unimpeded flight. The book contains six illustrations by a native artist. Mrs. Parker does not mention them, but she has informed the present writer that the artist had no European training. It may, however, be surmised that he had seen European pictures. N. W. T.

BORIC ACID AS A FOOD PRESERVATIVE.

THE report of the English departmental committee on the use of preservatives in foods contains voluminous evidence on the harmful nature of most of the antiseptics employed in commerce. It was issued in 1901, and among its recommendations one finds that the use of any preservative in milk should be constituted a punishable offence. It, however, makes an exception in the case of butter and cream, which are substances taken in relatively small amounts, and allowed 0·5 per cent. of boric acid in the former, and 0·25 per cent. in the latter case.

Those who have had the time to read the evidence will be struck with the almost complete unanimity of the medical witnesses on the harmful effects produced by boric acid and its compounds. Unfortunately there will always be some who disagree with the majority, and it is particularly unfortunate from the point of view of the public welfare that one of these is Dr. Oscar Liebreich, whose opinion is on most subjects entitled to careful consideration and respect. The special pleading on behalf of boric acid and borax contained in Dr. Liebreich's former publications are repeated in the pamphlet just issued, and we fear that the useful work of those who are trying to prevent adulteration, and protect the public from those tradesmen who cover their misdeeds and want of cleanliness by the employment of antiseptics dangerous to health, will be seriously impeded thereby.

The question has also become an acute one in America, and the United States Department of Agriculture appointed Dr. Wiley, their principal chemist, to investigate the matter on a large scale by experiments on human beings, over a long period. Dr. Wiley's report was most unfavourable to the use of these preservatives; the ill-health set up in the subjects of his experiments, and the alterations in bodily metabolism to which this was due, are described in detail, and furnish systematic evidence on the subject which confirms what was known from clinical experience, and to those who had experimented previously on animals. To the unprejudiced observer Dr. Wiley's report settled the matter once and for all.

The special object of Dr. Liebreich's new brochure is to criticise some details in Dr. Wiley's work. This is always an easy thing to do when the subjects of an experiment are numerous, and in the human subject in particular it is often difficult to obtain precise details. Some of these, on account of the ill-health set up by the drug, had to abandon the continuation of the observations. This obviously reduces the number of observations, but at the same time is in itself a striking piece of evidence against the continued use of borax and boric acid. Dr. Liebreich does not dispute the ill-health of Dr. Wiley's willing subjects, but he is driven to attribute this to other causes, like inefficient hygienic surroundings. He does not dispute the loss of body weight, but says this is not by any means always injurious.

Those interested in this most important question should of course read both sides, and one sincerely trusts that in this instance the weight of a great name will not be allowed to overbalance the all but universal testimony of others to the contrary.

[1] "Third Treatise on the Effects of Borax and Boric Acid on the Human System." By Dr. Oscar Liebreich. Pp. vii+70. (London: J. and A. Churchill, 1906.) Price 5s. net.

PROF. W. F. R. WELDON, F.R.S.

THE 'seventies of last century may be said to have witnessed the renaissance of biological studies in Cambridge. It was in the year 1870, if we mistake not, that Michael Foster, at the invitation of Trinity College, became prælector in physiology and founded the great school for which the university has since been famous. Of his pupils the greatest was F. M. Balfour. He very soon became the centre of a new system which was thrown off, so to speak, from the main body, and rapidly acquired form and influence.

Weldon was one of the most distinguished products of the zoological school which was in this way established. He was the son of Mr. Walter Weldon, F.R.S., the distinguished chemist, and was educated at King's College, London. He entered at St. John's College, Cambridge, in 1878, of which foundation he became first a scholar and in 1884 a fellow. After taking his degree in 1881 he at once threw himself with characteristic vigour and disinterestedness into zoological teaching and research. He became demonstrator in comparative anatomy in 1884, and held the office for one year. In 1885 he was appointed to the newly-established lectureship on the morphology of the invertebrata, which office he held until he left Cambridge in 1891. As a lecturer Weldon is not likely to be forgotten by those who heard him. He was remarkable for the ease and mastery with which he handled his subject, and for the earnestness and clearness of his teaching. It was impossible to sit inert under him; he had the gift of compelling attention.

Weldon's early researches were mainly concerned with morphological problems, the study of which had been so strongly stimulated by the work of Darwin. In the 'sixties, 'seventies and early 'eighties of last century the hope existed that it would be possible by minute morphological study actually to trace the pedigrees of existing organisms and to get some comprehension of the wonders and complexities of animal structure. In the 'eighties, however, with the progress of experience it began to be obvious that these hopes could not be realised, that the problem could not be solved by morphology, and that we must turn to other sources if we wanted to progress in ideas. Weldon was soon touched by the scepticism which thus arose, and cast about in the latter part of his time at Cambridge for new methods. These he saw must come in part at least from an exact study of variation, and

his work was henceforth mainly directed to that subject. He spent his vacations at the laboratory of the Marine Biological Association at Plymouth and in the Zoological Laboratory at Naples, and devoted himself to laborious and systematic measurements of the parts of various marine organisms. These researches were continued with increased vigour at University College, London, where in 1891 he succeeded Prof. Ray Lankester as Jodrell professor of zoology. Here he entirely fulfilled the expectations which had been formed of him at Cambridge. Effective and enthusiastic as a teacher, he soon gathered around him a body of young workers whom he inspired by his own intensive fire.

During his career at University College he played a leading part in initiating the changes which, after some set-backs, resulted in the recent reorganisation of the University of London as a teaching body. In the completion of this most important work he was debarred from active participation, for in 1899 he was appointed the Linacre professor of comparative anatomy in the University of Oxford.

At Oxford he devoted himself with signal success to the duties of his professorship, paying special attention to the subject of variation. He again formed the centre of an active school of research, and founded in conjunction with Prof. Karl Pearson the journal *Biometrika* to advance the subject which he had so much at heart. Of his biometric work much might be said, but this must suffice. He was the one English biologist who actually realised what the whole attempt to give quantitative exactness to biological concepts really means; and he was the first to calculate organic coefficients of correlation and to suggest their important bearing on evolution.

Weldon held the chair at Oxford until his death on Good Friday last, after an illness of little more than twenty-four hours. He was born in 1860, and was therefore a comparatively young man when he died. He had about reached the stage of life when the germinating processes of the brain have attained their maximum and the mind begins to take stock of its ideas and to seek for means of coordinating them and of so bringing them before the world. He had several works on hand, all of which are unfinished. The most important, perhaps, is that in which he hoped to set down the conclusions he had reached on the great subject of the origin and the handing on by heredity of the properties of organisms.

His work, therefore, is not finished, but of whom can it be said that his work is finished? He has at least carved out the steps by which others will mount. He has sown the seed. It is for us who remain and for those who come after us to reap the fruits of his labours.

He was essentially a good man, and happiness was his portion in this life. Blessed in his domestic circumstances, and in holding one of the most distinguished positions the zoological world has to offer; in the possession of good health, of considerable bodily strength and activity, of indomitable energy, of a quick and penetrating intellect which rendered all intellectual effort pleasurable, of acute literary and artistic instincts, of a simple, honest, and lovable nature which endeared him to all who came in contact with him, he had everything which is necessary for earthly happiness. So amply had nature lavished her gifts upon him that he might well have been counted among her spoilt children. But he was lofty in his aims and strenuous in his life. His early death is a grievous blow to science; to his friends it is an affliction hard to be borne; to those who loved him it can only appear as a cruel and unnecessary calamity; but yet, can we say that he was not happy in his death, as in his life?

Under the wide and starry sky
Dig the grave and let me lie,
Glad did I live and gladly die
And I laid me down with a will.

PROF. PIERRE CURIE.

M. PIERRE CURIE, co-discoverer with his wife, Mme. Sklodowska Curie, of the element radium, and the investigator of many of its properties, met his death as the result of a street accident in Paris on Thursday, April 19. He was crossing the Place Dauphine when he was knocked down by a cab and fell under a heavy van coming from the opposite direction. The wheels passed over his head, and when taken to the police station life was found to be extinct.

Cut off in the midst of a career of active scientific investigation, in the flower of life and at the height of a unique reputation, brilliantly won and universally acknowledged, his death will be mourned by the whole civilised world. In this country, where the importance of his work and discoveries was early and fully recognised, and where the fame attaching to his name has spread widely, deep sympathy will be felt for Mme. Curie in her tragic bereavement, coupled with a sense of loss that a partnership in science so illustrious and fruitful has been brought to so untimely a close.

Born in Paris on March 15, 1859, Pierre Curie received his early education at the Sorbonne, where he attained the degree of Doctor of Science. He was made professor of physics in the Municipal School of Physics and Chemistry in Paris in 1895, and in 1900 he became professor at the Sorbonne. His earlier researches, extending over the period 1885–1894, included investigations into the phenomenon of piezo-electricity, in conjunction with his brother, J. Curie, the construction and use of electrometers and guard-ring condensers, the magnetic properties of iron, oxygen, and other substances at different temperatures, and the construction of sensitive aperiodic balances.

In 1895 M. Curie married Marie Sklodowska, one of the senior students at the Municipal School, where he was professor, and joined his wife in the new field of research opened up by M. Henri Becquerel's discovery of the radio-activity of uranium and its compounds. From 1898 onwards appeared the remarkable joint publications dealing with the discovery of radium and the investigation of its properties. The great advances made by the two investigators in this field may be traced to the collaboration of a trained physicist and a skilled chemist in a subject which may truly be described as a meeting ground of the two sciences. M. Curie's earlier results on piezo-electricity, and the construction and use of electrometers and condensers were ingeniously applied to the requirements of the new work, and in his hands resulted in a ready and trustworthy method for the electrical measurement of radio-activity being worked out. In the detection and initial stages of the separation of radium and polonium in pitchblende, the method accomplished what in the hands of Bunsen the spectroscope had accomplished in the detection and separation of cæsium and rubidium in the waters of Durkheim. When sufficient radium had been obtained, M. Curie and his pupils investigated the physical properties, while Mme. Curie devoted herself to the more purely chemical problems, the determination of the atomic weight of the new element, and the attempt to separate polonium.

M. Curie's most important contributions to the study